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10/630,626	07/30/2003	Gregory A. Demopoulos	PH.1.0037.US2	9065

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EXAMINER
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ALSTRUM ACEVEDO, JAMES HENRY

ART UNIT	PAPER NUMBER
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1616

MAIL DATE	DELIVERY MODE
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11/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/630,626	<b>Applicant(s)</b> DEMOPULOS ET AL.	
	<b>Examiner</b> JAMES H. ALSTRUM ACEVEDO	<b>Art Unit</b> 1616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 9/25/09.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-10,12-16,23-25,28,55,57 and 59 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,9,24 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 7-8, 10, 12-16, 23, 28, 55, 57, and 59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

**Claims 1, 3-5, 7-10, 12-16, 23-25, 28, 55, 57, and 59 are pending.** Applicants previously cancelled claims 17, 29-54, and 56. Applicants newly cancelled claims 2, 6, 11, 18-22, 26-27, and 58. Claims 4-5, 9, 24, and 25 are withdrawn from consideration as being drawn to a non-elected species. **Claims 1, 3, 7-8, 10, 12-16, 23, 28, 55, 57, and 59 are under consideration in the instant office action.** Receipt and consideration of Applicants' claim set and remarks/arguments submitted on September 25, 2009 are acknowledged. All rejections not explicitly maintained in the instant office action have been withdrawn per Applicants' claim amendments and/or persuasive arguments.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/25/2009 has been entered.

***Election/Restrictions***

The species election first set forth on October 3, 2005 remains in effect, as well as Applicants' election of ketorolac (i.e. a NSAID) as the 1<sup>st</sup> agent and phenylephrine (i.e. an alpha-1 adrenergic agonist mydriatic agent) in the response filed on March 31, 2006

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue; and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1, 3, 8, 10, 12-16, 23, 28, 55, 57, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan (U.S. Patent No. 5,523,316) in view of Corbett et al. ("Intraocular adrenaline maintains mydriasis during cataract surgery", *British Journal of Ophthalmology*, 1994, abstract only; IDS reference), Masuda et al. (U.S. Patent No. 4,474,811) ("Masuda"), Revision of Pharmacology ("ROP"; 1/3/2007 IDS reference), and**

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the 1993 Drug Information Handbook (Lexi-Comp, Inc.: Cleveland, Ohio, 1993, pp 497 and 717-19) ("DIH").

### *Applicant Claims*

Applicants claim a method for perioperatively inhibiting ocular inflammation and effecting mydriasis during an intraocular ophthalmologic procedure comprising continuously irrigating intraocular tissues during an ophthalmologic procedure with a solution including at least (a) an anti-inflammatory agent that comprises a non-steroidal anti-inflammatory agent (NSAID) in solution at a concentration of no more than 100,000 nanomolar (i.e. a concentration equal to or less than 0.1 M) and (b) a mydriatic agent comprising an alpha-1 adrenergic receptor agonist included in solution at a concentration of no more than 500,000 nanomolar (i.e. a concentration less than or equal to 0.5 M).

### *Determination of the Scope and Content of the Prior Art (MPEP §2141.01)*

The teachings of Gan were set forth on pages 4-5 of the office action mailed on June 1, 2006, and are reproduced here:

21. An improved method of irrigating ophthalmic tissue and controlling intraocular pressure during intraocular surgical procedures which comprises applying to the affected ocular tissue a composition comprising:

an effective amount of a drug for controlling intraocular pressure selected from the group consisting of beta-blockers, alpha adrenergic agonists, muscarinic agonists, carbonic anhydrase inhibitors, angiotensin steroids, and prostaglandins;

an amount of an antioxidant/free radical scavenger effective to maintain normal function of corneal endothelial cells selected from the group consisting of beta carotene, ascorbic acid, vitamin E, glutathione, and cysteine; electrolytes comprising, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup>, Mg<sup>++</sup>, Cl<sup>-</sup>, bicarbonate, and phosphate in an amount effective to maintain tissue stability;

an energy source in an amount effective to satisfy the metabolic requirements of corneal endothelial cells and other ophthalmic tissues during the surgical procedure; said amount of bicarbonate further effective to maintain the fluid pump system of corneal endothelial cells and other ophthalmic tissues; and

a buffer in an amount sufficient to maintain the pH of the composition in the range of 6.8 to 8.0.

22. A method according to claim 21, wherein the drug for controlling intraocular pressure is selected from the group consisting of beta-blockers and alpha adrenergic agonists.

23. A method according to claim 22, wherein the drug for controlling intraocular pressure comprises a beta-blocker.

24. A method according to claim 23, wherein the beta-blocker is selected from the group consisting of betaxolol, timolol and levobunolol.

25. A method according to claim 22, wherein the drug for controlling intraocular pressure comprises an alpha adrenergic agonist.

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It is emphasized that Gan's invented method is explicitly taught as being suitable during an intraocular surgical procedure to control intraocular pressure (IOP). Furthermore, it is noted that **alpha adrenergic agonist in addition to being IOP controlling agents also cause mydriasis** and are thus mydriatic agents. Additional relevant teachings of Gan are set forth herein. The art recognizes that desirability that irrigation solutions utilized in ophthalmologic procedures emulate the contents and properties of the aqueous humor (col. 3, line 64 through col. 4, line 1). Thus, suitable irrigation solutions provide the eye with an energy source (e.g. glucose), a proper pH environment (i.e. pH of about 7.4) through a phosphate/bicarbonate buffer system, and metabolic support via the presence of necessary electrolytes, such as **sodium, magnesium, calcium, and potassium cations and chloride anions** (col. 2, line 31 through col. 3, line 4; col. 8, lines 23-57; claims 1, 10, 21, 30-40). The presence of glutathione is also desirable as it aids in aiding the metabolic pump mechanism (col. 2, line 67 through col. 3, line 4; col. 7, line 67 through col. 8, line 3). Glutathione is an antioxidant and its presence helps protect corneal endothelial cells from photochemically generated active oxygen. The formation of active oxygen (i.e. oxygen radicals) is associated with long exposure to light, such as occurs during cataract surgery or other intraocular surgical procedures, and active oxygen may damage ocular tissue. **The art recognizes that elevation of intraocular pressure (IOP) can damage the optic nerve**, which may result from surgical trauma, and thus, **it is desirable to prevent or minimize deleterious changes of the IOP (col. 4, lines 2-13, 40-47).** **Beta-blockers and alpha-adrenergic agonists are known to have utility in controlling the IOP** (col. 5, lines 15-21). Preferred beta-blockers for controlling IOP include **timolol, levobunolol, and mertipranolol** (col. 5, lines 22-67, especially lines 65-67) and these are present in amounts

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ranging from **0.001-0.1% w/w** based on the weight of the total composition. Preferred alpha-adrenergic agonists are clonidine derivatives, as described by formula (II) in Gan (col. 6, lines 17 through col. 7, line 23), and other clonidine-like compounds (col. 7, lines 23-46), wherein said **alpha-adrenergic agonists are present in an amount of about 0.001-0.1 % w/w** (col. 7, lines 47-49).

Corbett teaches that cataract **surgery is performed more easily if mydriasis can be maintained until the intraocular lens** has been inserted and that **adrenaline (i.e. epinephrine) intraocular irrigation is a safe and effective means of maintaining mydriasis during cataract surgery** (abstract). Epinephrine is an alpha-1 adrenergic receptor agonist.

Masuda teaches anti-inflammatory ophthalmologic solutions suitable for pre- and post-operative topical and/or **intraocular application to reduce inflammation**, wherein said solutions comprise FP (i.e. 2-(2-fluoro-4-biphenyl)-propionic acid) and a beta-cyclodextrin (title, abstract, col. 1, lines 5-21; col. 3, lines 27-33). Masuda teaches that FP has a strong inhibitory effect on the prostaglandin and quinine systems (col. 2, lines 19-21). Prostaglandins are released by the eye during ocular surgery or as a result of trauma and induce miosis and postoperative inflammation or elevate IOP (col. 1, lines 22-36). **Miosis during, for example, cataract surgery makes the operation difficult, thus, mydriatics, such as atropine, are administered.** FP is effective at inhibiting inflammation caused by prostaglandins at low concentrations and when used in combination with atropine, it enhances the mydriatic effect of atropine (col. 3, lines 27-33; Test Example 4: col. 11, line 45 through col. 13, line 14; Figures 6A through 8D).

The ROP generally teaches the topical and systemic drugs utilized routinely in the diagnosis and treatment of ocular diseases in the field of ophthalmology (pg. 25). Several types

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of drugs are used in ophthalmology to prevent or reduce inflammation, such as corticosteroids, which are widely used and typically administered locally (pg. 28). NSAIDs are used (i) to manage inflammatory conditions, including scleritis and episcleritis, (ii) inhibit intraoperative miosis during cataract surgery, (iii) pain in epithelial corneal defects after PRK, and (iv) in the prophylaxis and reduction of anterior segment inflammation following surgery and argon laser trabeculoplasty (pg. 29, left column). Other anti-inflammatories that are used include vasoconstrictors, such as xylometazoline and phenylephrine, which may also cause mydriasis and lower IOP when used at higher concentrations (pg. 29, right column).

Ketorolac is a known NSAID (DIH, pg. 497). Phenylephrine is a known mydriatic agent (DIH, pg. 717: “Use” section).

*Ascertainment of the Difference Between Scope the Prior Art and the Claims  
(MPEP §2141.012)*

Gan does not expressly teach continuous irrigation or the use of irrigating solutions comprising analgesics or anti-inflammatories. These deficiencies are obvious per the teachings of Gan or are cured by the teachings of Corbett, Masuda, and the ROP. Gan does not explicitly teach alpha-1 adrenergic receptor agonists (e.g. phenylephrine) as mydriatic agents. This deficiency is cured by the DIH.

*Finding of Prima Facie Obviousness Rational and Motivation  
(MPEP §2142-2143)*

It would have been prima facie obvious to combine the teachings of Gan, Corbett, Masuda, and the ROP, because all references are in the same field of endeavor, namely the field



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of ophthalmologic surgical procedures and materials. From the teachings of Gan it would have been apparent to an ordinary skilled artisan at the time of the instant invention that one would want to provide an irrigation solution comprising electrolytes, an energy source, antioxidants, and IOP reducing agents to prevent or at least minimize the likelihood of changes in the IOP that could lead to ocular damage. From the teachings of Corbett and Masuda, it would have been obvious and desirable to maintain mydriasis during an intraocular procedure, because miosis is known to make such procedures more challenging and is known to result from the release of pro-inflammatory prostaglandins during said procedures. It would have been prima facie obvious to combine the teachings of Gan, Corbett, and Masuda, because these prior art references are in the same field of intraocular ophthalmologic preparations and methods. Based upon the combined teachings of Gan, Corbett, and Masuda the ordinary skilled artisan would be cognizant of the need to minimize increases in IOP, the occurrence of miosis, and the desirability of inducing mydriasis during intraocular ophthalmologic procedures. Thus, the inclusion of Gan's invented irrigation solution and methods would allow an ordinary skilled artisan to control IOP with a reasonable expectation of success. The inclusion of Masuda's NSAID or another known NSAID (e.g. ketorolac) (DIH) would reasonably be expected to minimize unwanted prostaglandin-induced inflammation and miosis, and an ordinary skilled artisan would be motivated to combine a mydriatic agent in the irrigation solutions resulting from the combined prior art teachings.

It would have been prima facie obvious to utilize an alpha-1 adrenergic receptor agonist as a mydriatic agent, because the combined prior art teaches that it is desirable to utilize mydriatic agents during ophthalmological surgeries (e.g. cataract surgery). Applicants admit that phenylephrine is an alpha-1 adrenergic receptor agonist (see pg. 13: section C. "Mydriatic

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Agents”). The prior art (DIH) recognizes that phenylephrine is a known mydriatic agent. Thus, it would have been prima facie obvious per the teachings of the combined prior art to utilize phenylephrine, as a mydriatic agent. It is prima facie obvious to utilize a compound in a manner for which it is known to be suitable. An ordinary skilled artisan would have had a reasonable expectation of successfully utilizing phenylephrine as a mydriatic agent, because it is a known mydriatic agent.

Regarding the relative amount of a given drug present in an irrigation solution, it is well within the skill of an ordinary artisan to ascertain the therapeutically effective quantity of a known drug or drugs for use to treat conditions for which said drugs are routinely indicated. Regarding continuous irrigation, it would have been prima facie obvious to a person of ordinary skill in the art to apply an irrigation solution continuously, because such an application would be reasonably expected to emulate the action of the naturally occurring aqueous humor during an ophthalmologic procedure and in addition it would be reasonably expected to remove any ambient particulate matter, such as dust, from settling upon the eye. The use of drugs in an intraocular irrigation solution (e.g. Gan) in a manner for which said drugs are routinely used in ophthalmologic procedures is prima facie obvious and such use would provide an ordinary skilled artisan with a reasonable expectation of success due to the predictable nature of said use. Applicants’ recited maximum concentrations of 500,000 nM (i.e. 0.5 M) for the elected mydriatic agent (i.e. phenylephrine, which was a molecular mass of 167.205 g/mol) would correspond to a phenylephrine weight percentage of ~83.6%, assuming a solution density of ~1.00 g/mL. Similarly, for the elected anti-inflammatory agent (i.e. ketorolac with a molecular mass of 255.27 g/mol), the maximum concentration recited in Applicants’ claims of 100,000 nM

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(i.e. 0.1 M) would correspond to a ketorolac weight percentage of ~25.5%, assuming a solution density of ~1.00 g/mL. Thus, given that the maximum recited concentrations for both the NSAID and mydriatic agent are very high, an ordinary skilled artisan would reasonably be able to obtain an ophthalmologically acceptable irrigation solution inducing mydriasis and exhibiting anti-inflammatory properties upon routine optimization of the amounts of these active agents. Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because the combined teachings of the prior art is fairly suggestive of the claimed invention.

### ***Response to Arguments***

Applicant's arguments filed 9/25/09 have been fully considered but they are not persuasive. Applicants' traverse the instant rejection by (1) addressing the deficiencies of the cited prior art individually and stating why the individual prior art alone, in Applicant's opinion, does not render the claimed invention obvious; (2) stating that the instant rejection relies on impermissible hindsight, (3) Applicant's previous citation of Hirowatari and Flach allegedly establishes that the combination of any two medications cannot be routinely accomplished by the ordinary skilled ophthalmology artisan or that said artisan would allegedly not routinely combine said medications, and (4) the combined prior art allegedly provides no reason to combine mydriatic and anti-inflammatory agents in an irrigation solution to be used during an ophthalmic surgical procedure.

The Examiner respectfully disagrees with Applicants' traversal arguments. Regarding (1), one cannot show nonobviousness by attacking references individually where the rejections

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are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding (2), in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding (3), the Examiner has reviewed the NPL references (i.e. Flach and Hirowatari) previously cited by Applicant and disagrees with Applicant's conclusion that the intraocular administration of a mydriatic agent and an anti-inflammatory agent is non-obvious from the topical administration of said agents. The Office's position regarding the references cited by Applicant follows. Concerning Hirowatari, which is not prior art, Applicants allege that this post-filing reference teaches away from the intraocular irrigation of ocular tissue during a procedure, because it states that repeated instillation of mydriatic and anti-inflammatory ophthalmologic solutions may affect compliance and may damage the corneal epithelium. Hirowatari is not considered to provide a teaching away, because it does not criticize, discourage, or discredit the use of mydriatics in combination with anti-inflammatory agents during an intraocular ophthalmologic procedure. Hirowatari merely states the possibility of an undesirable result, namely damage of corneal epithelium. Hirowatari does not provide any evidence or state that the prior art generally accepted that the combination of mydriatic agents

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and anti-inflammatories, in general, was expected to result in undesirable side-effects and injury to ocular tissue during ophthalmologic procedures. Hirowatari only explicitly identifies antiseptics in ophthalmologic solutions as being recognized as a cause of damage to corneal epithelia (pg. 59, left column, 1<sup>st</sup> paragraph). In fact, Hirowatari concludes that the combination of tropicamide (a mydriatic agent), phenylephrine (a mydriatic agent and IOP reducing agent), and diclofenac (a NSAID) “ha[s] a similar effect on mydriasis as the three individual solutions, but was less destructive to the corneal epithelium (abstract).”

Regarding “Flach ‘O01800’”, this reference does not imply that using known drugs in ophthalmologic surgical procedures represents an increased risk of deleterious side-effects or potential harm, but rather provides a general encouragement to physicians to thoroughly screen patients prior to ophthalmologic procedures. Applicants' imply that “Flach ‘O01800’” discourages the administration of NSAIDs, such as diclofenac, during ophthalmologic procedures, due to observed corneal melting in 11 cases. This is a mischaracterization of “Flach ‘O01800’”, because Flach clearly states that (1) corneal complications related to topical NSAID use are uncommon (pg. 207, 1<sup>st</sup> sentence of discussion section); (2) reports of corneal melting associated with topical NSAID treatment are surprising...because both infectious and noninfectious corneal melting disorders have many different causes, and careful examination of patients is important before drug toxicity is identified as the cause in all these cases (pg. 208, left column); (3) “...it appears that potentially important coexistent ocular disease was largely ignored during review of these cases... (pg. 208, left column); (4) the potential causes of corneal melting suggest that many causes are unrelated to medical treatment (pg. 208, left column, and table II, right column of pg. 208); (5) “To the contrary, well-designed laboratory studies suggest

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that these [commercially available, brand name] topically administered NSAIDs may be beneficial in protecting animals from corneal melting (pg. 208, right column); and (6) "...in these 11 cases of corneal melting in patients using topical diclofenac suggest that coexistent factors other than a simple drug toxicity are implicated, if not causative, in these toxicities... (pg. 209, conclusion section, right column). Thus, "Flach '001800" is not a teaching away from the use of NSAIDs in ophthalmologic procedures, because it does not criticize, discredit, or discourage the use of NSAIDs in ophthalmologic procedures.

Regarding (4), it is noted that the medications combined are known to be suitable for ophthalmological applications. Thus, the combination of known ophthalmological drugs that are used in the manner for which said drugs are known to be suitable is obvious. For example, using a mydriatic agent to induce mydriasis is an obvious use of mydriatic agent. It is well within the skill of the ordinary ophthalmologically skilled artisan to utilize ophthalmologically approved drugs in the manner said drugs are known to be suitable. Furthermore, it is noted that the prior art recognizes that phenylephrine exhibits anti-inflammatory, IOP reducing, and mydriasis inducing properties (ROP; DIH), which the art recognizes as being desirable in medicaments utilized in a solution applied to the eye during an ophthalmological surgical procedure (Masada, Corbett, ROP, DIH). The instant rejection is deemed proper.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined

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application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1 and 28 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over (1) claims 1-12 and 18 of U.S. Patent No. 6,261,279 (USPN '279); (2) claims 18-20 of U.S. Patent No. 6,413,961 (USPN '961); and (3) claims 12-17 and 23-28 of U.S. Patent No. 6,420,432 (USPN '432) all in view of Gan (U.S. Patent No. 5,523,316) in view of Corbett et al. ("Intraocular adrenaline maintains mydriasis during cataract surgery", *British Journal of Ophthalmology*, 1994, abstract only; IDS reference), Masuda et al. (U.S. Patent No. 4,474,811) ("Masuda"), Revision of Pharmacology ("ROP"; 1/3/2007 IDS reference), and the 1993 Drug Information Handbook (Lexi-Comp, Inc.: Cleveland, Ohio, 1993, pp 497 and 717-19) ("DIH") for the reasons of record set forth on pages 12-13 of the office action mailed on June 1, 2006 and further articulated below. The cited U.S. Patents lack the express teaching of methods wherein at least one agent is a mydriatic agent or an intraocular pressure-increasing agent. This deficiency is cured by the teachings of Gan, Corbett, Masuda, and ROP, which have been set forth above in the instant office action. Gan clearly teaches the desirability of including IOP reducing agents in an intraocular irrigation solution utilized in an ophthalmologic surgical procedure, as evidenced by the art's recognition**

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that an increase in ocular pressure can lead to irreversible damage to the optical nerve. The prior art has also recognized that the application of a NSAID (e.g. ketorolac) in combination with a mydriatic agent (e.g. homatropine or phenylephrine) is effective to treat pain associated with ophthalmologic procedures, such as cataract surgery. Thus, it would have been *prima facie* obvious to an ordinary skilled artisan that the application of an irrigation solution comprising an NSAID, a mydriatic agent, and/or an IOP reducing agent results in mydriasis when applied directly (i.e. topically or intraocularly) to ocular tissues, such as in claims 1 and 28 of the instant application. For these reasons, an ordinary skilled artisan would conclude that claims 1 and 28 of the instant application are *prima facie* obvious over the cited claims of USPN '279, USPN '961, and USPN '432 in view of the above cited references.

### ***Response to Arguments***

Applicant's arguments filed September 25, 2009 have been fully considered but they are not persuasive. Applicant has traversed the instant rejections by arguing that because the aforementioned Demopoulos U.S. patents claim perioperative methods for inhibiting pain and/or inflammation during surgical procedures by utilizing known anti-inflammatory and/or analgesic agents (i.e. anti-pain agents) that it would allegedly be an unobvious modification to the claimed methods of said patents to include mydriatic agents and IOP reducing agents. The Examiner respectfully disagrees, because the teachings of the cited prior art references teach the desirability of including mydriatic agents and IOP reducing agents in solutions utilized during ophthalmological surgical procedures. For example, the prior art recognizes (Gan) that an increase in intraocular pressure can lead to deleterious side effects in a patient; thus, it is *prima*



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facie obvious and desirable to include IOP reducing agents. Therefore, the obviousness-type double patenting rejections 1-3 set forth above are deemed to remain proper and are maintained.

***Conclusion***

**Claims 1, 3, 7-8, 10, 12-16, 23, 28, 55, 57, and 59 are rejected. Claims 4-5, 9, 24, and 25 are withdrawn from consideration as being drawn to a non-elected species. No claims are allowed.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner can normally be reached on M-F, ~10:00-6:00 and Saturdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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